First record of *Kyphosus sectator* (Kyphosidae) along the French Mediterranean coast

by

Patrice FRANCOUR (1) & Nejla MOUINE (2)

RÉSUMÉ. - Première signalisation de *Kyphosus sectator* le long des côtes françaises de Méditerranée.

En novembre 2006, un chasseur sous-marin a pêché par petits fonds une saupe brésilienne *Kyphosus sectator* (Linnaeus, 1758) de 48,9 cm de longueur totale qui nageait au-dessus d’un herbier à *Posidonia oceanica* à proximité de Saint-Tropez (France, Méditerranée nord-occidentale). Les très rares signalisations de *K. sectator* en Méditerranée ont été faites entre 1847 et 1903 ou après 1996. D’après les critères retenus par Quignard et Tomasini (2000), *K. sectator* peut être considéré comme une espèce néo-colonisatrice en Méditerranée.

Key words. - Kyphosidae - *Kyphosus sectator* - MED - France - Neocolonizer species - First record.

The family Kyphosidae comprises 42 species and 12 valid species of the genus *Kyphosus* Lacepède, 1801, two of which have been reported in the north-eastern Atlantic (Froese and Pauly, 2007): the yellow sea chub *Kyphosus incisor* (Cuvier, 1831) and the Bermuda sea chub *Kyphosus sectator* (Linnaeus, 1758). The Bermuda sea chub is a relatively common herbivorous species extending from Massachusetts (USA) and Bermuda southward to Brazil, including the Gulf of Mexico and the Caribbean Sea, the Antilles, Central and South American coasts and West African coast (Froese and Pauly, 2007). *K. sectator* occurs sporadically in Madeira, Canaries, and Azores (Almada *et al.*, 1999), in South Morocco (Collignon, 1971), in South Portugal (Canas *et al.*, 2005), in North West of Spain (Bañon, 2004) and Arcachon (France) (J.-C. Quéro, pers. comm.). *Kyphosus* spp. typically inhabits shallow waters over sandy, rocky or grassy bottoms around reefs, and juveniles are commonly found among floating algae or below flotsam (Froese and Pauly, 2007).

Table I. - Morphometric and meristic data of the *Kyphosus sectator* caught off the French Mediterranean coast. [*Données morphométriques et méristiques du* K. sectator *capturé sur la côte française de Méditerranée*.]

Morphometric parameters	Size (mm)	Meristic parameters	Number
Total length (TL)	489	Dorsal fin rays	XI + 13
Fork length (FL)	438	Pectoral fin rays	18
Standard length (SL)	373	Anal fin rays	III + 11
Dorsal fin length	197	Pored scales in lateral line	56
Pectoral fin length	69	Scales above lateral line	11
Pelvic fin length	61	Scales below lateral line	17
Anal fin length	89	Gill-rakers on first arch	7 + 18
Pre-dorsal length	154		
Pre-pectoral length	98		
Pre-pelvic length	137		
Pre-anal length	252		
Body depth	150		
Body width	46		
Caudal peduncle height	35		
Head length	97		
Eye diameter	19		
Inter-orbital distance	45		
Pre-orbital length	34		
Post-orbital length	46		
	Weight (g)		
Total weight	1535.4		
Eviscerated weight	1351.8		

In November 2006, a recreational spearfisherman caught a large Bermuda sea chub in Saint-Tropez, southern France (43°16’25” N; 6°38’08” E). The specimen was deposited in the fish collection of the Monaco Oceanographic Museum with catalogue number POI-0004820. This specimen was alone, swimming midwater, above a shallow bottom covered by *Posidonia oceanica* and photophilic algae (8 m depth). The main morphometric and meristic characters are presented in table I. These data are in agreement with the measurements and counts reported by other authors who described this species.

The first *K. sectator* recorded in the Mediterranean was caught on 2 November 1847 in Trieste, northern Adriatic (Šoljan, 1963). Dulčić and Ahnelt (2006) recently confirmed this identification after examination of the material from the Natural History Museum of Vienna. Two other specimens were caught in November 1883 in Arenella, north of Palermo (Sicily) (Doderlein, 1883) and in January 1903 in the Gulf of Genoa (Ariola, 1904). Other records in Mediterranean were more recent: January 1996 off the eastern coast of Mallorca Island (western Mediterranean) (Merella *et al.*, 1998) and June 2003 off Annaba (Algeria, southern Mediterranean) (Hemida *et al.*, 2004). Even in the most recent and well-documented fish fauna of the Eastern Mediterranean, there is no record of *Kyphosus* spp. and *K. sectator* is absent from the Red Sea (Froese and Pauly, 2007). To date in the Mediterranean, the record along the Algerian coasts (Hemida *et al.*, 2004) is the only one to report capture of several individuals; all previous records mention capture of a single specimen.

Records of tropical species from the Mediterranean continue to increase, following the biodiversity change and enrichment of the basin fish fauna, probably due to a global phenomenon of seawater warming (Francour *et al.*, 1994). The presence of Bermuda sea chub seems to be casual owing to rarity of this species in Mediterranean. These rare records do not suggest that *K. sectator* populations have been established successfully in Mediterranean areas (Hemida *et al.*, 2004). This phenomenon could have been even facilitated by the fact that

---

(1) E.A. 4228 ECOMERS, University of Nice-Sophia Antipolis, Parc Valrose, 06108 Nice CEDEX 2, FRANCE. [francour@unice.fr]
(2) Laboratory of Animal Biology, Science University of Tunis, 2092 Tunis El Manar, TUNISIA.

Cybium 2008, 32(3): 275-276.

despite being typical of tropical and sub-tropical waters, *K. sectator* is probably an eurythermal species, tolerating a wide range of seawater temperatures (Canas *et al.*, 2005). Most specimens caught in the Mediterranean or in the North-West Atlantic were larger than 20 cm TL and were probably transported below drifting flotsam or able to swim long distances. Quignard and Tomasini (2000) defined neocolonizer species considered to be typically Atlantic and recently reported in the Mediterranean. They listed 26 recent neocolonizers since 1984-1986 but did not mention *K. sectator*. This species can be considered a neocolonizer, which showed two different phases of migration into the Mediterranean: an old one (records from 1847 to 1903) and a more recent one (records since 1996), with no mention of capture between 1904 and 1996. The presence of *K. sectator* in the western Mediterranean basin has to be monitored to confirm the settlement of a new herbivorous fish.

Acknowledgements. - The authors are extremely grateful to Jean-Philippe Morin (SIVOM des Maures) who forwarded pictures and contact of Ludovic Danoy, the spearfisherman. Paolo Guidetti, Marco Milazzo, and Roberto Poggi, Director of the Museo Civico di Storia Naturale of Genova, who helped in bibliographical research, and Mat Vanderklift for his valuable comments on this paper are greatly thanked. Pierre Gilles and Michèle Bruni from the Oceanographic Museum of Monaco gave information about their fish collection.

REFERENCES

ALMADA V.C., HENRIQUES M. & E.J. GONÇALVES, 1999. - Ecology and behaviour of reef fishes in the temperate north-eastern Atlantic and adjacent waters. *In*: Behaviour and Conservation of Littoral Fishes (Almada V.C., Oliveira R.F. & E.J. Gonçalves, eds), pp. 33-69. Lisboa: ISPA.

ARIOLA V., 1904. - Pesci nuovi o rari per il golfo di Genova. *Ann. Mus. Civ. Storia Nat. Genova*, Ser. 3, 1: 153-168.

BAÑON R., 2004. - New records of two southern fish in Galician waters (NW Spain). *Cybium*, 28: 367-368.

CANAS A., VASCONCELOS P., LINO P.G. & M.N. SANTOS, 2005. - Northernmost record of *Kyphosus sectator* (Osteichthyes: Perciformes: Kyphosidae) in the north-eastern Atlantic. *J. Mar. Biol. Ass. U.K.*, 85: 1535-1537.

COLLIGNON J., 1971. - *Kyphosus sectatrix*, poisson nouveau pour la faune marocaine. *Bull. Inst. Pêches Marit. Maroc*, 18: 71-75.

DODERLEIN P., 1883. - Dell'esotico genere *Pimelepterus*, Lac. nelle acque del golfo di Palermo. *Natural. Sicil.*, 3: 81-86.

DULČIĆ J. & H. AHNELT, 2006. - On the validity of the record of the Bermuda sea chub *Kyphosus sectator* (Kyphosidae) from the Adriatic Sea. *Period. Biol.*, 108: 231-233.

FRANCOUR P., BOUDOURESQUE C.F., HARMELIN J.G., HARMELIN-VIVIEN M. & J.-P. QUIGNARD, 1994. - Are the Mediterranean waters becoming warmer? Information from biological indicators. *Mar. Poll. Bull.*, 28: 523-526.

FROESE R. & D. PAULY (eds), 2007. - FishBase. World Wide Web electronic publication. www.fishbase.org. Version March 2007.

HEMIDA F., KANOUN N., GOLANI D., BEN SOUISSI J., GUÉLORGET O. & C. CAPAPÉ, 2004. - Records of the Bermuda sea chub, *Kyphosus sectator* (Linnaeus, 1758) (Osteichthyes: Kyphosidae) from the coastal waters of Algeria (Southern Mediterranean). *Ann. Ser. Hist. Nat.*, 14: 49-52.

MERELLA P., MASSUTI E. & S. DEUDERO, 1998. - On the occurrence of *Kyphosus sectator* (Osteichthyes: Kyphosidae) in the western Mediterranean. *J. Mar. Biol. Ass. U.K.*, 78: 687-690.

QUIGNARD J.-P. & J.A. TOMASINI, 2000. - Mediterranean fish biodiversity. *Biol. Mar. Medit.*, 7: 1-66.

ŠOLJAN T., 1963. - Fishes of the Adriatic. 428 p. Belgrade: Nolit Publishing.

Reçu le 5 juin 2007.
Accepté pour publication le 12 septembre 2007.